

CLAIMS

1. A closed annular sealing material, wherein:
the ends in the peripheral direction of one or a plurality of expanded
5 porous polytetrafluoroethylene bands are joined to each other;
the width (W) of the sealing material from the inner periphery to the
outer periphery is greater than the thickness (t) of the outer peripheral surface
thereof; and
the angle of elevation of the annular portion of the sealing material in
10 relation to the horizontal plane formed by the edge of the inner peripheral
surface thereof is 0 to 45°.
2. A closed annular sealing material, wherein:
the ends in the peripheral direction of one or a plurality of expanded
15 porous polytetrafluoroethylene bands are joined to each other;
the width (W) of the sealing material from the inner periphery to the
outer periphery is greater than the thickness (t) of the outer peripheral surface
thereof; and
the angle of elevation of the annular portion of the sealing material in
20 relation to the horizontal plane formed by the edge of the inner peripheral
surface thereof is 0°.
3. The closed annular sealing material according to claim 2, wherein the ratio
(W/t) of width (W) and thickness (t) is 5 or greater.
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4. The closed annular sealing material according to claim 2, wherein:
the closed annular sealing material is in a substantially annular shape; and
the ratio (x/W) of the diameter (x) of the inner periphery and width (W) is 15
or less.
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5. The closed annular sealing material according to claim 3, wherein:
the closed annular sealing material is in a substantially annular shape; and
the ratio (x/W) of the diameter (x) of the inner periphery and width (W) is 15
or less
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6. The closed annular sealing material according to claim 2, wherein:
the closed annular sealing material is in a rectangular shape; and

the radius of the inscribed circle at the corner of the inner periphery is 10 mm or less.

- 5 7. The closed annular sealing material according to claim 3, wherein:
the closed annular sealing material is in a rectangular shape; and
the radius of the inscribed circle at the corner of the inner periphery is 10 mm or less.
- 10 8. The closed annular sealing material according to claim 2, wherein:
the closed annular sealing material is in a rectangular shape; and
the radius of the inscribed circle at the corner of the inner periphery is 0 mm.
- 15 9. The closed annular sealing material according to claim 3, wherein:
the closed annular sealing material is in a rectangular shape; and
the radius of the inscribed circle at the corner of the inner periphery is 0 mm.
- 20 10. The closed annular sealing material according to claim 1, wherein the annular
portion has a laminate structure of expanded porous polytetrafluoroethylene
layers.
- 25 11. The closed annular sealing material according to claim 2, wherein the annular
portion has a laminate structure of expanded porous polytetrafluoroethylene
layers.
- 30 12. The closed annular sealing material according to claim 3, wherein the annular
portion has a laminate structure of expanded porous polytetrafluoroethylene
layers.
- 35 13. The closed annular sealing material according to claim 10, wherein the
expanded porous polytetrafluoroethylene layers are laminated in the width (W)
direction.
14. The closed annular sealing material according to claim 13, wherein the annular
portion comprises a nonporous polytetrafluoroethylene layer inserted between
the laminated expanded porous polytetrafluoroethylene layers.
15. The closed annular sealing material according to claim 10, wherein the
expanded porous polytetrafluoroethylene layers are laminated in the
thickness (t) direction.

16. The closed annular sealing material according to claim 1, wherein in which at least one end of the band in the peripheral direction is tapered; and the tapered surface comprises at least part of the band joint.
- 5 17. The closed annular sealing material according to claims 2, wherein in which at least one end of the band in the peripheral direction is tapered; and the tapered surface comprises at least part of the band joint.
- 10 18. The closed annular sealing material according to claim 3, wherein in which at least one end of the band in the peripheral direction is tapered; and the tapered surface comprises at least part of the band joint.
- 15 19. The closed annular sealing material according to claim 1, wherein the two ends of the band are joined by at least one means selected from double-sided adhesive tape, (adhesive, and heat fusion or ultrasonic welding via at least one film selected from a group consisting of a tetrafluoroethylene-hexafluoropropylene copolymerized film and a tetrafluoroethylene-perfluoroalkylvinylether copolymerized film.
- 20 20. The closed annular sealing material according to claim 2, wherein the two ends of the band are joined by at least one means selected from double-sided adhesive tape, adhesive, and heat fusion or ultrasonic welding via at least one film selected from a group consisting of a tetrafluoroethylene-hexafluoropropylene copolymerized film and a tetrafluoroethylene-perfluoroalkylvinylether copolymerized film.
- 25 21. The closed annular sealing material according to claim 3, wherein the two ends of the band are joined by at least one means selected from:
double-sided adhesive tape,
30 adhesive, and
heat fusion or ultrasonic welding via at least one film selected from a group consisting of a tetrafluoroethylene-hexafluoropropylene copolymerized film and a tetrafluoroethylene-perfluoroalkylvinylether copolymerized film.
- 35 22. A closed annular sealing material according to claim 1, wherein an adhesive layer is formed on either one of the annular flat surfaces orthogonal to the outer peripheral surface.

23. A closed annular sealing material according to claim 2, wherein an adhesive layer is formed on either one of the annular flat surfaces orthogonal to the outer peripheral surface.
- 5 24. A closed annular sealing material according to claim 3, wherein an adhesive layer is formed on either one of the annular flat surfaces orthogonal to the outer peripheral surface.
- 10 25. A method for manufacturing the closed annular sealing material according to claim 1, comprising:
bending in the width (W) direction one or a plurality of expanded porous polytetrafluoroethylene bands whose length in the thickness (t) direction of the resulting closed annular sealing material is less than the width (W) thereof to form a ring as a whole;
15 pre-fixing the bands to maintain the bent shape;
thermosetting the bands; and
joining the two ends in the peripheral direction of the bands with each other before, during, or after the thermosetting,
where the directions are defined based in a coordinate system
20 comprising the width (W) direction, thickness (t) direction, and peripheral direction of the resulting closed annular sealing material.
- 26 A method for manufacturing the closed annular sealing material according to claim 2, comprising:
25 bending in the width (W) direction one or a plurality of expanded porous polytetrafluoroethylene bands and/or boards whose length in the thickness (t) direction of the resulting closed annular sealing material is equal to or greater than the width (W) thereof to form a ring as a whole;
pre-fixing the bands and/or boards to maintain the bent shape;
30 thermosetting the bands and/or boards;
slicing the resulting thermoset assembly to a prescribed thickness (t);
and
joining the two ends in the peripheral direction of the thick bands, thick boards, or slices thereof with each other before, during, or after the
35 thermosetting,
where the directions are defined based in a coordinate system comprising the width (W) direction, thickness (t) direction, and peripheral direction of the resulting closed annular sealing material.

27. The method for manufacturing a closed annular sealing material according to claim 26, wherein the joining is performed after the slicing.